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10/527.621

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11/30/2006

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EXAMINER

ANDERSON, GUY G

ART UNIT

PAPER NUMBER

2883

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/527,621

Applicant(s)

DEMIGUEL ET AL.

Examiner

Guy G. Anderson

Art Unit

2883

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 2/27/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

- 1.1 The disclosure is objected to because of the following informalities: the term generators [as used in describing “the input face as a cylindrical diopter with **generators** perpendicular to the plane”] is not adequately defined in the disclosure. Examiner is unclear as to what the term is meant to describe.

Appropriate correction is required.

Claim Objections

- 2.1 Claim 2 disclosure is objected to because of the following informalities: the term generators [as used in describing “the input face as a cylindrical diopter with **generators** perpendicular to the plane”] is not adequately defined in the disclosure. Examiner is unclear as to what the term is meant to describe.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

- 3.1 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 3.2 Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6646317 to Takeuchi in view of US-5513196 to Bischel.

Regarding Claim 1, Takeuchi specifically discloses a high power photodiode comprising/wherein:

1a) a light-absorbing layer, a waveguide coupled evanescently with the said light-absorbing layer, such waveguide having one end coupled with an input facet of the component to receive an input wave. [Abstract, Fig. 1-7, Col. 2, Lines 25-60.]

Takeuchi does not specifically disclose a structure wherein:

1b) the component being characterized in that the input face is convex.

Bischel discloses an optical source with mode reshaping comprising a convex integrated lens structure as a means of focusing energy into a waveguide.

[Abstract, Fig. 9, Col. 20, lines 32-67.]

Since Bischel and Takeuchi are from the same field of endeavor, the integrated lens of Bischel would have been recognized in the pertinent art of Takeuchi.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the integrated lens of Bischel with the evanescent coupling structure of Takeuchi in order to more effectively couple power into the waveguide.

- 3.3 Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6646317 to Takeuchi in view of US-5513196 to Bischel.

The combination of Takeuchi and Bischel discloses all of the limitations of the base claim upon which Claim 2 depends.

Regarding Claim 2, Takeuchi does not specifically disclose a structure wherein:

- 2) characterized in that the input face has the shape of a cylindrical diopter with generators perpendicular to the plane of the light-absorbing layer.

Bischel specifically discloses a cylindrically shaped convex lens structure. [Fig. 9.]

Since Bischel and Takeuchi are from the same field of endeavor, the integrated lens of Bischel would have been recognized in the pertinent art of Takeuchi.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the integrated lens of Bischel with the evanescent coupling structure of Takeuchi in order to more effectively couple power into the waveguide.

- 3.4 Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6646317 to Takeuchi in view of US-5513196 to Bischel.

The combination of Takeuchi and Bischel discloses all of the limitations of the base claim upon which Claim 3 depends.

Regarding Claim 3, Takeuchi does not specifically disclose a structure wherein:

- 3) The optical component is characterized in that the radius of curvature of the cylindrical diopter is of the order of 20 microns.

It has been held where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only a routine skill in the art. *In re Aller*, 105 USPQ 233.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to design a specific radius of curvature of the integrated convex lens, as this would control the focal length of the integrated lens.

- 3.5 Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6646317 to Takeuchi in view of US-5513196 to Bischel.

The combination of Takeuchi and Bischel discloses all of the limitations of the base claim upon which Claim 4 depends.

Regarding Claim 4, Takeuchi specifically discloses a high power photodiode comprising/wherein:

- 4) The optical component characterized in that it comprises a photodiode incorporating the light-absorbing layer. [Abstract, Fig. 1-7, Col. 2, Lines 25-60.]

- 3.6 Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6646317 to Takeuchi in view of US-5513196 to Bischel in further view of a Non-Patent Literature publication "Packaging Relaxed Semiconductor Lasers with Diluted Waveguide Structure" by Choa et al., published by IEEE in 1994.

The combination of Takeuchi and Bischel discloses all of the limitations of the base claim upon which Claim 5 depends.

Regarding Claim 5, Takeuchi does not specifically disclose a structure wherein:

- 5) The optical component characterized in that the waveguide is a diluted waveguide. Choa discloses a diluted waveguide structure which simplifies laser-fiber coupling and which can be applied to polarization independent photonic devices.

Since Choa, Bischel and Takeuchi are from the same field of endeavor, diluted waveguide of Choa would have been recognized in the pertinent art of Takeuchi.

Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to combine the diluted waveguide structure of Choa with the evanescent coupling structure of Takeuchi in order to more effectively couple power into the waveguide.

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- 3.7 Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over US-6646317 to Takeuchi in view of US-5513196 to Bischel.

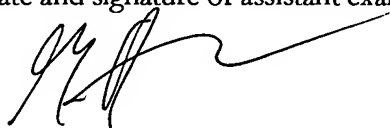
The combination of Takeuchi and Bischel discloses all of the limitations of the base claim upon which Claim 4 depends.

Regarding Claim 6, Takeuchi specifically discloses a high power photodiode comprising/wherein:

- 6) The optical component, characterized in that the waveguide comprises at least: a first InP layer, an InGaAsP layer deposited on the first InP layer, and a second InP layer deposited on the InGaAsP layer. [Abstract, Fig. 1-7, Col. 3, Lines 20-67.]

Conclusion

- 4.1 Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guy G. Anderson whose telephone number is 571.272.8045. The examiner can normally be reached on M-Th 1130-2200.
- 4.2 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
- 4.3 Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.
- 4.4 Date and signature of assistant examiner.



November 19, 2006



Frank G. Font
Supervisory Patent Examiner
Technology Center 2883